IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-15. (Canceled)

16.   (Currently Amended) A system for capturing cellular information from a population of cells, the system comprising:

an image acquisition system comprising a charged coupled camera adapted to capture an image of a plurality of manipulated cells, ~~wherein the image acquisition system~~ comprises a magnification of at least 1X or greater; ~~the illumination apparatus providing for an acquisition of the image of the plurality of manipulated cells,~~

an illumination apparatus comprising a flexible liquid light guide coupled to the image acquisition system for highlighting the plurality of manipulated cells, wherein the flexible liquid light guide is ~~comprises~~ a flexible hose-type sleeve wherein said sleeve is filled with a liquid and wherein said liquid light guide is capable of vibrationally isolating the illumination apparatus from the image acquisition system wherein the illumination apparatus provides for an acquisition of the image of the plurality of manipulated cells and wherein said liquid light guide has less than about 30% transmission loss of the light at a remote location; and

a database system coupled to the image acquisition system, the database system being adapted to be populated with information of the image of the plurality of manipulated cells;

wherein the information comprises a plurality of descriptors, each of the descriptors comprising a plurality of features, each of the features corresponding to a cellular or subcellular component from the plurality of manipulated cells.

17.   (Original)   The system of claim 16 wherein the image is a digitized representation of the plurality of manipulated cells, the digitized representation highlighting each of the features of the plurality of manipulated cells.

18.   (Original)   The system of claim 16 wherein each of the features provides a characteristic selected from at least a count, area, perimeter, length, breadth, fiber length, fiber breadth, shape factor, elliptical form factor, inner radius, outer radius, mean radius, equivalent

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radius, equivalent sphere volume, equivalent prolate volume, equivalent oblate volume, equivalent sphere surface, average intensity, total intensity, optical density, radial dispersion, texture difference, a population statistic value, and a spatial value of the plurality of manipulated cells.

19-44. (Canceled)

45.   (Previously presented)   The system of claim 16, wherein the liquid is an aqueous solution containing chloride or phosphate.

46.   (Previously presented)   The system of claim 16, wherein the liquid light guide further comprises a thin layer on the inside of the sleeve.

47.   (Previously presented)   The system of claim 46, wherein said layer comprises tetrafluoroethylene and mexafluoropropylene.

48.   (Previously presented)   The system of claim 46, wherein said layer comprises tetrafluoroethylene and perfluoromethyl vinyl ether.

49.   (Previously presented)   The system of claim 46, wherein said layer comprises tetrafluoroethylene and perfluoropropyl vinyl ether.

50.   (Canceled)

51.   (Canceled)

52.   (Currently amended) The system of claim 16 further comprising a stage comprising a device for moving the cells cell holder in a spatial direction.

53.   (Previously presented)   The system of claim 16 further comprising a computing device connected between the database system and the image acquisition system.

54.   (Previously presented)   The system of claim 16 wherein the database system is selected from an objected oriented database, a relational database and a mixed database.

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55.   (Currently amended) The system of claim 16, further comprising a filter wheel having a plurality of filters, ~~each filtering for a different color~~.

56.   (Previously presented)   The system of claim 16, further comprising software that controls operation of the image acquisition system.

57.   (Currently amended) The system of claim 16, further comprising software for ~~creating and sequentially naming files of the information.~~ acquiring multi-wavelength images from multiple sites on one multi-well plate, sequentially naming image files, and logging any imaging parameter information with image files.

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